



## REMARKS

Attached hereto is a marked-up version of the changes made to the specification and the claims by the current amendment. The attached page is captioned **"VERSION WITH MARKINGS TO SHOW CHANGES MADE."**

Enclosed is a check in the amount of \$1,140.00 to cover the additional claims (12 new claims x 18.00 = \$216.00) plus (11 independent claims - only 2 independent claims were initially filed - X \$84.00 = \$924.00). The Assistant Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-1752.

A prompt examination and allowance is respectfully solicited. If there are any additional questions, please contact me at your earliest convenience.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

**In the Specification:**

**(1.) The following paragraph was added prior to the BACKGROUND OF INVENTION:**

**CROSS REFERENCE TO RELATED APPLICATIONS**

The subject invention is related to copending application entitled "Portable, Wireless Monitoring and Control Station for Use in Connection with a Multi-Media Surveillance System Having Enhanced Notification Functions," Serial Number 09/854,033, filed on May 11, 2001 and incorporated by reference herein.

**(2.) The following changes were made to page 2, lines 4-8:**

These prior-art monitoring devices often use technologies that are not 'intelligent' in the modern sense; they merely provide an 'ON/OFF' indication to the centralized monitoring system. The appliances also are not 'networked' in the modern sense; they are generally hard-wired to the centralized monitoring system via a 'current loop' or similar arrangement, and do not provide situational data other than their ON/OFF status.

**(3.) The following changes were made to page 2, lines 28-31 to page 3, lines 1-5:**

More recently, security cameras have employed video compression technology, enabling the individual cameras to be connected to the centralized system via telephone circuits. Due to the bandwidth constraints imposed by the public-switched telephone system, such systems are typically limited to low-resolution images, or low frame rates, or both. Other more modern cameras have been designed for "web cam" use on the Internet. These cameras use digital techniques for transmission, however their use for security surveillance is limited by low resolution and by slower refresh rates. These cameras are also designed for use[d] by direct connection to PC's, such as by Printer, USB or Firewire Ports. Thus the installation cost and effectivity is limited with the unwieldy restriction of having to have a PC at each camera.

**(4.) The following changes were made to page 3, lines 16-20:**

Another commonplace example is the still-image compression commonly used in digital cameras. These compression techniques may require several seconds to compress a captured image[,] but once done, the image has been reduced to a manageably small size, suitable for storage on inexpensive digital media (e.g., floppy disk) or for convenient transmission over an inexpensive network connection (e.g., via the internet over a 28.8 kbit/sec modem).

**(5.) The following changes were made to page 3, lines 30-31 to page 4, lines 1-9:**

These “closed circuit television” systems typically consist of a monochrome or color television camera, a coaxial cable, and a corresponding monochrome or color video monitor, optional VCR recording devices, and power sources for the cameras and monitors. The interconnection of the camera and monitor is typically accomplished by the use of coaxial cable, which is capable of carrying the 2 to 10megahertz bandwidths of baseland closed circuit television systems. There are several limitations to coaxial cable supported systems. First, the cable attenuates by the signal in proportion to the distance traveled. Long distance video transmission on coaxial cable requires expensive transmission techniques. Second, both the cable, per se, and the installation [is]are expensive. Both of these limitations limit practical use of coaxial closed circuit systems to installations requiring less than a few thousand feet of cable. Third, when the cable cannot be concealed is not only unsightly, but is also subject to tampering and vandalism.

**(6.) The following changes were made to page 4, lines 10-31:**

Other hardwired systems have been used, such as fiber optic cable and the like, but have not been widely accepted primarily due to the higher costs associated with such systems over coaxial cable. Coaxial cable, with all of its limitations, remains the system of choice to the present day. Also available are techniques using less expensive and common twisted pair cable such as that commonly used for distribution of audio signals such as in telephone or office intercom applications. This cable is often referred to as UTP (twisted-pair) or STP (shielded twisted-pair) cable. Both analog and digital configurations are available [Both analog] and [digital techniques] have been implemented. This general style of twisted pair cable, but in a more precise format, is also widely used in Local Area Networks, or LAN[']s, such as the 10Base-T Ethernet system, 100 Base-T, 1000

Base-T and later systems. These newer types of cable, such as "Category 5" wire, are better suited for higher bandwidth signal transmission and are acceptable for closed circuit video applications with suitable special digital interfaces. By way of example, typical audio voice signals are approximately 3 kilohertz in bandwidth, whereas typical video television signals are 3 megahertz in bandwidth or more. Even with the increased bandwidth capability of this twisted pair cable, the video signals at base band (uncompressed) can typically be distributed directly over twisted pair cable only a few hundred feet. In order to distribute video over greater distances, video modems (modulator/demodulators) are inserted between the camera and the twisted pair wiring and again between the twisted pair wiring and the monitor. Twisted pair cable is lower in cost than coaxial cable and is easier to install. For the longest distances for distribution of video, the video signals are digitally compressed for transmission and decompressed at the receiving end.

**(7.) The following changes were made to page 5, lines 13-22:**

Because of the inherent limitations in the various closed circuit television systems now available, other media have been employed to perform security monitoring over wider areas. This is done with the use of CODECs (compressors/decompressors) used to reduce the bandwidth. Examples include sending compressed video over standard voice bandwidth telephone circuits, and more sophisticated digital telephonic circuits such as frame relay or ISDN circuits and the like. While commonly available and relatively low in cost, each of these systems is of narrow bandwidth and incapable of carrying "raw" video data such as that produced by a full motion video camera, using rudimentary compression schemes to reduce the amount of data transmitted. As previously discussed, full motion video is typically 2 to 10 megahertz in bandwidth while typical low cost voice data circuits are 3 kilohertz in bandwidth.

**(8.) The following changes were made to page 6, line 31 to page 7, lines 1-4:**

In many security applications it is desirable to monitor an area or situation with high resolution from a monitor located many miles from the area to be surveyed. As stated, none of the prior art systems readily available accommodates this. Wide band common carriers [such as] that are used in the broadcast of high quality television signals could be used, but the cost of these long distance microwave, fiber or satellite circuits is prohibitive.

**(9.) The following changes were made to page 8, lines 6-24:**

One aspect of the invention provides for continuous or selective monitoring of a scene with live video to detect any change in the scene while minimizing the amount of data that has to be transmitted from the camera to the monitoring station and while at the same time maximizing storage, search and retrieval capabilities. Another aspect of the invention is a method of event notification whereby detected events from sensors, sensor appliances, video appliances, legacy security alarm systems and the like are processed and a comprehensive and flexible method of notifying individuals and organizations is provided using a plurality of methods, such as dial up telephones, wireless PDAs, and other wireless devices, and direct network notification to workstations based on I/P addressing such as to workstations, digital pagers, digital cellular phones, wireless PDA[']s and other network and wireless devices. The preferred embodiments of the invention are directed to a method for collecting, selecting and transmitting selected scene data available at a camera to a remote location which includes collecting the image data on a preselected basis at the camera and defining and transmitting an original scene to the remote location. Only subsequent data representing a change in the original scene is transmitted. Each transmitted data scene may be tagged with unique identifying data. The transmitted data is stored for archival, search and retrieval. The selection scheme of the invention also permits notification of the detected events to be sent via a network to selected monitoring stations.

**(10.) The following changes were made to page 10, lines 13-15:**

The recognition of a detected object left in a specific location or taken from a specific location also lends itself to generation and transmission of a notification signal for alerting response personnel at the time the object is detected, appearing or disappearing.

**(11.) The following changes were made to page 10, lines 16-20:**

Regions of images may be defined as well so that the system can ignore anticipated or normal motions such as a rotating fan or the like. This is done by masking defined portions of the scene. This can be pre-programmed such as b[e]y setting up masking at a[n] remote monitor. In this manner, the camera or encoder appliance only transmits images or video that has a pre-indication of

a change in the previous scene, greatly reducing the amount of data to be transmitted over the chosen conduit.

**(12.) The following changes were made to page 10, lines 21-28:**

Masks can also be built automatically. The system may be “trained” to build a motion mask during a controlled period of time, then any motion detected in a region over a given threshold would set the mask. For example, the ceiling fan can be turned on, the training armed, then any areas of the scene where the motion of the ceiling fan was detected would set bits in the mask. Later, when the system is armed normally, the bits in this mask would be used to block motion alarming because of motion caused by the fan blades. That motion in that area of the picture would be ignored. Thus a certain threshold of activity over and above a normal activity (of the ceiling fan) is required to trigger a motion detection event.

**(13.) The following changes were made to page 11, lines 19-28:**

The intelligent cameras can support several types of event detection at one time. For example, a camera [can be] detecting any motion at all would generate a motion event to control storing to the archival server, a process we call “activity gated storage.”[.] That same camera can simultaneously have a mask set such that the motion in the area of a painting indicating either attempted vandalism or theft of the painting would trigger an alarm event for that region. That region could be highlighted on the monitor when such an alarm event occurs. Further, that same camera can again simultaneously have an object detection algorithm activated such that if an object such as a handbag (potentially with a bomb in it) were left in view of the camera, an object alarm event would be generated. Again, the region around the handbag can be highlighted on the monitor. [BOB – MORE CLAIMS??]

**(14.) The following changes were made to page 11, lines 29-31 to page 12, lines 1-5:**

Once collected, the application software determines how the associated image and other sensor data, such as sound, is processed and transmitted by the system. For example, if there were any motion, the images would be archived on the server. If there were any motion, the images would be archived on the server. If there were a motion event around the painting, a warning could be transmitted to a guard at a remote monitor guard station and a determination of what was going

on around the painting could be done remotely. If an object were detected, a local guard could be dispatched to analyze the bag to determine if it were misplaced or if it was a real threat.[.] Other types of simultaneous event detection can also be activated in the sensor/camera such as acoustic (gunshot or explosion) detection, temperature detection, etc.

**(15.) The following changes were made to page 12, lines 6-27:**

In the preferred embodiment, all of the transmitted data is entered into a[n] multimedia data archive and retrieval server. The system server is a multimedia situational archival server and is typically located on the network at a central management location. The server stores the transmitted data on a disk drive and optionally on a back-up tape drive or other very large storage array device such robotic tape, optical or high-density disk storage. As each data event, image or frame is received, it is filed with a unique identifier comprising date, time, event, user, and/or camera or encoder and/or file information. [.]This allows full search capability by date, time, event, user, and/or camera on command, greatly enhancing retrieval and reconstruction of events. From an operation perspective, a key aspect of the invention is the graphical user interface as typically displayed on an interactive monitor screen such as, by way of example, a CRT located at a remote monitoring station or a LCD on a wireless portable PDA monitoring station. This permits the user to search or browse the images in the database and to perform automated searches through the archive for events of interest. In the preferred embodiment, the user interface includes a map of the areas covered by the system and current live images from selected cameras. On screen controls are provided for selecting and adjusting the cameras. The screen also contains a series of controls used for searching and browsing. The time, date, and type of events are displayed. The user may scan forward and backward from an image, event, or time, and may select another camera to determine the image at the same time and date. In an enhanced system of the preferred embodiment, the selected camera will flash on the map. If an enhanced system of the preferred embodiment the location of an event will also flash on the map, if detected by a video event from a camera, or if detected with another sensor or appliance, such as a legacy alarm system or an advanced network appliance.

**(16.) The following changes were made to page 13, lines 8-10:**

In the preferred embodiment it may be desirable to have the system [to] automatically switch to real time display of cameras detecting an unexpected change in motion. Specifically, as a camera begins transmission to the server, the display screen will be activated to show the image.

**(17.) The following changes were made to page 13, lines 15-22:**

This invention also defines a method of incorporating legacy alarm systems such as may have been installed by ADT, or the like. Such an alarm system can be integrated by connecting a reporting printer port to the network via an interface computer or appliance, and interpreting the printer data format to generate events to log into the database and to perform automated notification processing[on]. This technique allows the native interface to the alarm system to be monitored in a conventional manner. The integration can also be accomplished by connecting to the legacy alarm system with a native interface that behaves like the intended alarm monitoring terminal. Thus all of the monitoring would be done through the new integrated system.

**(18.) The following changes were made to page 13, lines 23-31 to page 14, lines 1-2:**

This invention also provides a method of incorporation legacy access control systems such as provided by ADT or HID or the like. These systems can be configured to read swipe badges, read proximity badges, read keypad data, unlock strike plates on doors, lock strike plates on doors, control sirens and lights, and other functions. Such an access system may be interfaced using a native control interfaces such as the typical RS-232 interface, or event recording can be accomplished by connection to the usual printer output port. The output data from the access control system can then be filtered or interpreted to a format that can be logged and a data format to generate events to log into the database and to perform automated notification process upon. If the interface is a bi-directional interface the system can be configured by the networked system and the access configuration set up at the monitor stations throughout the network with proper passwords. If a printer port is utilized, only output information may be collected, logged, and acted upon.



**(19.) The following changes were made to page 17, lines 1-8:**

It is an object of this invention to provide multiple methods of connectivity of PDA[']s to the hosting network as follows:

- 1) Plug-in connections for areas where absolute connectivity is needed, such as a particular monitor desk or station for a guard.
- 2) Wireless LAN connectivity for completely mobile connectivity in areas covered by WLAN access points, and
- 3) Wireless carrier connectivity for areas not covered by WLAN access points, such as outdoors o[n]r in patrol cars.

**(20.) The following changes were made to page 18, lines 19-31 to page 19, lines 1-6:**

One aspect of the invention provides for continuous or selective monitoring of a scene with live video to detect any change in the scene while minimizing the amount of data that has to be transmitted from the camera to the monitoring station and while at the same time maximizing storage, search and retrieval capabilities. Another aspect of the invention is a method of event notification whereby detected events from sensors, sensor appliances, video appliances, legacy security alarm systems and the like are processed and a comprehensive and flexible method of notifying individuals and organizations is provided using a plurality of methods, such as dial up telephones, cellular and wireless telephones, pagers, e-mail to computers, digital pagers, cellular phones, wireless PDA[']s, and other wireless devices, and direct network notification to workstations based on I/P addressing such as to workstations, digital pagers, digital cellular phones, wireless PDA[']s and other network and wireless devices. The preferred embodiments of the invention are directed to a method for collecting, selecting and transmitting selected scene data available at a camera to a remote location includes collecting the image data on a preselected basis at the camera and defining and transmitting an original scene to the remote location. Subsequent data of the scene is compared to the data representing the scene in its original state. Only subsequent data representing a change i[s]n the original scene is transmitted. Each transmitted data scene may be tagged with unique identifying data. The transmitted data is stored for archival, search and retrieval. The selection scheme of the invention also permits notification of the detected events to be sent via a network to selected monitoring stations.

**(21.) The following changes were made to page 20, lines 1-9:**

Configuring the cameras to send only those images that have changed significantly from the previous image may substantially reduce storage requirements. Such an approach effectively detects the presence of motion in the scene captured by the camera. The level of activity can also be monitored. By way of example, certain levels of activity may be considered normal even though they may deviate from a previous image. An example of this is people walking through the halls during a class change time period. In this case, the system may ignore activity during a normal class change period but may compare the image prior to the period with an image immediately after the period to determine if there is a residual change once the hall is cleared, such as an object being left behind or a student being present when the hall is supposed to be clear.

**(22.) The following changes were made to page 20, lines 10-22:**

Fig. 2 [I]llustrates the concept. A camera has previously captured prior scene 21, and has stored it in an image memory. Subsequently, the camera captures current scene 22, and stores it as shown. The camera then calculates the difference between the two scenes, and produces a 'Difference Scene' 23 as shown. The Difference Scene may then be compressed using, for example, JPEG or any other suitable compression mechanism. The Difference Scene may then be transmitted to the archival server for storage and subsequent analysis. Additionally, the Difference Scene 23 is statistically summarized by means of a histogram 24. A histogram is not the only possible method for motion detection. A variety of regional motion detection schemes are possible and would be of use in this invention. For example, the two respective scenes may be difference without generating the statistical histogram; any inter-scene pixel difference above some defined threshold would be indicative of motion. Alternatively, the DC terms for each macroblock in a discrete cosine transform or wavelet transform of the respective scenes may be interframe-differenced to detect motion. Neither of these implementations differs in spirit from the invention.

**(23.) The following changes were made to page 21, lines 17-22:**

The histogram may be profiled such that patterns emerge. For example, during a class change at a known time it is expected to see a certain high motion profile. Between class changes another lesser motion histogram profile is expected. If the actual histogram differs from the

expected histogram at any given time, an alarm can be generated, cameras activated, and so on. For example, a fire or someone producing a weapon would likely produce a lot of “panic activity” and thus an increased profile, and would trigger the alarm event.

**(24.) The following changes were made to page 21, lines 28-31 to page 22, lines 1-15:**

A further refinement of the invention is depicted in Fig. 3. A captured scene 33 contains a continually moving object, such as the ceiling fan 3[6]7. Since this object’s motion is not of general interest, it is not desirable that its motion should trigger the generation and transmission of still frame images. This would waste storage space on the archive server. To avoid this, the scene 33 is divided into some number of regions. In the illustration, the scene is divided into 8 columns and 8 rows, totaling 64 distinct regions in the scene. Instead of generating a single motion histogram representing the entire scene, individual motion histograms are generated for each separate region. The resulting matrix of regional histograms 34 indicates which regions of the scene contain motion, and indicates the degree of motion in each region. This regional histogram matrix is then modified by a weighting matrix 35. In the simplest case, this matrix contains a value of 1 in each region, except for those regions where known motion is to be masked. The regions to be masked 38 contain a value of zero. Each regional histogram value is multiplied by it[']s corresponding value in the weighting matrix. The resulting motion matrix 36 thus contains 64 individual motion histograms, and the regional histograms in the masked regions contain a value of zero. Thus, motion of the fan is not detected as motion, and does not cause unnecessary transmission and storage of still image data of the archive server. Note that the weighting values used for each region in the weighting matrix need not be restricted to binary values of zero and one. The actual weight values used may be continuous variables between zero and one (or represented as 0% to 100%). This allows some regions of a scene to be given greater sensitivity to motion, as compared with other regions.

**(25.) The following changes were made to page 23, lines 27-31 to page 24, lines 1-11:**

A further refinement of data compression will also reduce the large amount of multicasting required to support the encoder array of a multiple camera/multiple sensor system utilizing network routers. As an example, a system with 100 encoders/cameras [for] would require multicast traffic estimated as follows:

$$100 \times 256 \text{ KBPS for QSIF} = 25.6 \text{ MBPS}$$

100 x 1 MBPS for SIF = 100 MBPS

In addition, unicast traffic for JPEG at 100 x 64 x 8 KBPS = 51.2 MBPS

The aggregate data rate if ALL of this is dumped on a LAN at one time is 176.8 MBPS.

In the subject invention, this traffic may be reduced by operating the SIF's by turning them off and on upon demand. Specifically, when an application such as the guard station software is commanded to call for video from a specific camera, the application would instruct the camera or a centralized controller to tell the camera to start streaming the SIF. The fact that the SIF is only turned on when an application is going to use – display the video – will save bandwidth. In this example, if all guard stations were watching 4 x 4 video displays that are exclusively Q[-]SIF, none of the SIF sources would be turned on thus saving 100 MBPS of multicast data from being placed on the network.

**(26.) The following changes were made to page 24, lines 12-17:**

In the present invention, using routers and also switches that are coordinated by routers, the multicast traffic will not be allowed to pass the routers and/or switches unless the applications request the data. This allows routers to decide to allow the never ceasing multicast streams to pass through or not [would be]via a periodic request for the stream to be sent that is coming from the application at the client. The request would be passed by the network back through switches, routers to toward the destination, and would keep the channel open.

**(27.) The following changes were made to page 25, lines 3-11:**

The use of motion detection from multiple cameras to build a still frame matrix of trigger activity over a period of time permits recording of a history of a person's activity to be archived on sequential panes of a split screen. This permits the selection of any sequence of playback video and dissection of the stream of images with placement of sequential still frames on sequential panes of a split screen. This allows viewing of temporal events by screening from one pane to another. Since the time of each image is also recorded, the time between images can be reviewed such that non-sequential images, such as every fourth, are displayed. This also tracks the speed at which a sequential event is taking place, or provides a temporal "zoom\_."["Temporal zoom control" can be adjusted, thus causing the database to repaint the images based on the new temporal zoom factor.

**(28.) The following changes were made to page 25, lines 13-23:**

The database holds a record of images, motion, triggers, alarms, and event processing actions that have been taken. As the database is searched and/or played back forward, reverse, fast or slow, all of the associated information such as images, motion levels, triggers, alarms, and event processing can be displayed in synchrony with each other. After the fact information can be added at specific time locations also, such as Word Files, Power Point Images, e-mails, and the like. These can then become part of the master database recording information about image events. In addition to collected data, created data may also be retrieved. For example, the histogram may be retrieved from the database, wherein the histogram shows the data in the same manner as it did when created. The playback can be in real time, faster, or slower than real time. Playback can also be forward or backward. This permits searching for "trigger" events in the database, then playing back in real time, faster, or slower than real time.

**(29.) The following changes were made to page 29, lines 13-22:**

In one embodiment of the invention, legacy systems may be included in the system of the subject invention by utilizing the printing output port for recording status of legacy systems. In many of these systems, the printer output is via an RS-232 port. The system of the subject invention intercepts the printer output signal and transmits it to the system server where it is time-stamped and logged along with other data. This permits synchronization with system data for research and playback purposes. The server may also be set up to interpret this legacy data and generate alarm and notification signals as described later herein. For example, if a perpetrator accessed a door at a defined unauthorized time the legacy system will detect the opening of door contacts and generate an output print signal for generating a report. This signal is sent to the system server and notification will occur as with other system components.

**(30.) The following changes were made to page 30, lines 19-23:**

The filter 104 manages this using the priority data entered in the zone and sensor database 108 provided in a suitable memory format in the central server. When the appropriate priority is indicated, and a decision is made to notify a remote station of a specific alarm or event condition,

this is released from the filter 104 to the notification processor 106 and the event notification takes place. The process for notification is described below.

**(31.) The following changes were made to page 31, lines 21-29:**

There are two methods for defining mask motion data. It is possible to define the values before thresholding such that the motion amount is preserved for future analysis, thus automatically defining a threshold. Also, a binary matrix may be generated after thresholding such that only motion locations, not amounts, is preserved. Both methods may be used with equally satisfactory results. Preserving the motion amounts can provide data that would allow “rerunning” motion detection after the fact with any threshold value desired. Other analysis of the data, such as false alarm analysis, can be better accomplished using this method. However this requires more data storage. Storage of binary motion data only preserves storage space. Depending on application and on server capacity, either system is adequate for the purposes of the subject invention.

**(32.) The following changes were made to page 33, lines 19-28:**

An important aspect of the invention is the ability to generate and transmit a notification signal in response to the presence of motion in a monitored zone. Specifically, when a notification signal is generated by the filter 104, a selected event signal is transmitted over the network as controlled by the notification processor 106. The signal incorporating this data also identifies the time, date and location of the transmitted event data. This signal can be sent to any remote location on the network. For example, if a particular camera detects a difference signal and starts sending still image data to the archival system, the same signal can be sent to a guard station and can be used to trigger an audible and/or visual alarm at the guard station, with or without the image component of the signal. A display can identify the date, time and location of the origin of the signal based on the information embedded in the image signal generated upon the detection of a monitored motion.

**(33.) The following changes were made to page 34, lines 18-29:**

As indicated in Fig. 6, numerous event notification schemes are possible, utilizing current device technology. The various notification server gateways 118, 120, 122 are connected via standard circuit technology to, by way of example, audio recognition systems, wave files, noise monitoring systems, audio pagers, cellular telephones, historic land line telephone systems, closed

circuit telephone systems, PDA[']s, [digital pagers], digital pagers and/or cell phones with or without e-mail capability, computer servers on the network, LAN workstations, both wired and wireless, and the like. Where graphic output is available, the notification signal can include a map, and when available, an image of the event through the use of the surveillance cameras. One of the significant advantages of the notification system of the subject invention is the ability to selectively manage the type of data transmitted and the stations to which the data is transmitted, greatly minimizing the use of available bandwidth. For example, graphic information would be sent to a computer server station but not to an office telephone system.

**(34.) The following changes were made to page 40, lines 23-28:**

As previously disclosed, the server 'tags' it['] still-frame images with information indicative of which camera captured the image, and of the time and date of the image. This supports efficient retrieval of desired images based on simple inquiries describing location and time of the images. Additionally, the server may store related information concerning the images, such as location or amount of motion within each captured scene, or other alarm that may have triggered the image such as door entry switches, fire detectors and the like.

**(35.) The following changes were made to page 41, lines 15-16:**

When the 'Time' button o[i]f Fig. 19 is pressed, the system displays the screen of Fig. 20. This displays the time interval selected by the user.

**(36.) The following changes were made to page 45, lines 15-25:**

The basic GUI is depicted in Fig. 4. The upper left region contains a map 40 of the area covered by the system. The[e] upper right region contains the image 41 currently retrieved from the Archive Server. The bottom of the screen contains a series of controls used for image searching and browsing. When viewing archived images, an indicator 43 shows the time and date of the image currently displayed. A play button 45 causes stored images from the current camera to be displayed sequentially, at a rate controlled by the speed slider control 47. The pair of buttons 44 and 46 are provided to allow the user to manually step backwards or forwards respectively. A slide indicator 48 is provided to indicate the position of the current image within the selected time interval, and to allow the user to zoom forwards or backwards by dragging the indicator. Finally, a Button 42 may

be clicked to indicate which camera is currently displayed, and button 49 may be clicked to indicate the current time span available for display.

**(37.) The following changes were made to page 47, lines 24-29:**

Moreover, the map display may be overlaid with vectors, showing the intruder's movements schematically through the building. In a refinement, these movement vectors on the map may be rendered more accurate by knowledge of which regions within a scene[-]contained motion. For example, if a gymnasium camera was configured for a wide shot, it might show three sides of the gymnasium and several doors. If motion is detected only at door 3, then the movement vector on the map display so indicates.

**In the Claims:**

**Claims 78-89, which contain no new matter, are added:**

78. (new) A method for determining a response due to a change in image data, the method comprising:

- capturing image data;
- capturing a change in the image data;
- calculating a difference between the image data and the change in the image data;
- generating a comparison histogram, based on the difference, indicating a degree of the difference; and
- determining an appropriate response based on the degree of the difference.

79. (new) A method for determining a response due to a change in image data, the method comprising:

- capturing image data;
- capturing a change in the image data;
- calculating a difference between the image data and the change in the image data;
- if the difference is above a threshold, generating a comparison histogram, based on the difference, the histogram indicating a degree of the difference; and
- determining an appropriate response based on the degree of the difference.



80. (new) A method for determining a response due to a change in image data, the method comprising:

- capturing image data at a plurality of positions from a plurality of cameras;
- capturing a change in the image data from the plurality of cameras;
- if the change is above a threshold from the plurality of positions, correlating the change from the plurality of cameras; and
- calculating a difference between the image data and the correlated change in the image data.

81. (new) A method for determining a response due to a change in image data, the method comprising:

- capturing image data at a plurality of positions from a plurality of cameras;
- capturing a change in the image data from the plurality of cameras;
- if the change is above a threshold from the plurality of positions, correlating the change from the plurality of cameras;
- calculating a difference between the image data and the correlated change in the image data;
- generating a comparison histogram, based on the difference, the histogram indicating a degree of the difference; and
- determining an appropriate response based on the degree of the difference.

82. (new) A method for determining a response due to a change in image data, the method comprising:

- capturing image data;
- capturing a change in the image data;
- calculating a luminance difference between the image data and the change in the image data;
- determining a degree of the difference based on differences between pixels associated with the change; and
- determining an appropriate response based on the degree of the difference.

83. (new) A method for determining a response due to a change in image data, the method comprising:

capturing image data;

masking a portion of the image data;

capturing a change in the non-masked portion of the image data;

calculating a difference between the image data and the change in the non-masked portion of the image data; and

generating a comparison histogram, based on the difference, indicating a degree of the difference.

84. (new) A method for determining a response due to a change in image data, the method comprising:

capturing image data;

masking a portion of the image data;

enlarging the masked portion;

capturing a change in the non-enlarged masked portion of the image data;

calculating a difference between the image data and the change in the non-masked portion of the image data; and

generating a comparison histogram, based on the difference, indicating a degree of the difference.

85. (new) A method for determining a response due to a change in image data, the method comprising:

capturing image data;

automatically masking a portion of the image data where an event consistently occurs;

enlarging the masked portion;

capturing a change in the non-enlarged masked portion of the image data;

calculating a difference between the image data and the change in the non-masked portion of the image data; and

generating a comparison histogram, based on the difference, indicating a degree of the difference.

86. (new) A method for determining a response due to a change in image data, the method comprising:

- capturing image data;
- masking a portion of the image data;
- capturing a change in the masked portion of the image data;
- calculating a difference between the image data and the change in the masked portion of the image data; and
- generating an alarm based on the difference.

87. (new) A method for determining a response due to a change in image data, the method comprising:

- capturing a prior image scene;
- capturing a current image scene;
- calculating a difference between the scenes;
- producing a difference scene based on the calculated difference;
- creating a statistical summary of the difference scene;
- summing value changes of the difference scene statistics; and
- if the summed changes exceeds a threshold, determining an event has occurred.

88. (new) A method for indicating an event in a video stream, comprising:

- detecting the event; and
- displaying the event;
- wherein an indication of an increased amount of the event can be displayed by altering a first icon;
- wherein an indication of a decreased amount of the event can be displayed by altering a second icon;
- wherein the first icon and the second icon can be altered at a faster rate to indicate an increased amount of the event;
- wherein the first icon and the second icon can be altered at a faster rate to indicate an increased length of the event;

wherein the first icon and the second icon can be altered at a slower rate to indicate a decreased amount of the event;

wherein the first icon and the second icon can be altered at a slower rate to indicate a decreased length of the event; and

wherein the altering consists of at least one of a following item:

a flashing of the icon;

a blinking of the icon;

a brightness of the icon;

a color of the icon;

a contrast of the icon; and

an outline of the icon.

89. (new) A method for indicating an event in a video stream, comprising:

detecting the event; and

displaying the event;

wherein an indication of an increased amount of the event can be displayed by altering an icon at an increased rate; and

wherein an indication of a decreased amount of the event can be displayed by altering the icon at a decreased rate.